

*TFW*

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of :

Fuquan Liang ) Group Art Unit: 3641  
Serial No.: 10/527,997 ) Examiner: To be assigned  
Filed: October 31, 2005 ) Confirmation No. 6314

For: GLIDE SUBMARINE DRIVEN BY MULTIMEDIA

**REQUEST FOR CORRECTED FILING RECEIPT****MAIL STOP MISSING PARTS**

Commissioner for Patent  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Attached is a copy of the Filing Receipt from the U.S. Patent and Trademark Office in the above-captioned application for which issuance of a corrected Filing Receipt is respectfully requested. The requested correction is indicated in red ink.

Applicant requests that the title be corrected to read:

**--GLIDE SUBMARINE DRIVEN BY MULTIMEDIA--**

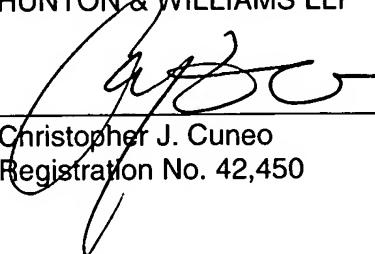
as originally requested in the Preliminary Amendment filed on October 31, 2005 (copy attached). Applicant respectfully requests that a corrected Filing Receipt be issued in due course.

It is believed that no fee is due in connection with this Request. However, if it is determined otherwise, the Commissioner is hereby authorized to charge such fees to the undersigned's Deposit Account No. 50-0206.

Respectfully submitted,

HUNTON & WILLIAMS LLP

Dated: February 23, 2006

By:   
Christopher J. Cuneo  
Registration No. 42,450

Hunton & Williams LLP  
Intellectual Property Department  
1900 K Street, N.W., Suite 1200  
Washington, D.C. 20006-1109  
(202) 955-1500



O I P E 14P45  
FEB 23 2006  
UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

JAA/CJC

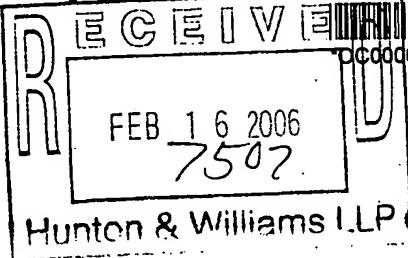
APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY.DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/527,997	10/31/2005	3641	1520	99999.IEM020012P	2	8	1

**COPY**

CONFIRMATION NO. 6314

21967

HUNTON & WILLIAMS LLP  
INTELLECTUAL PROPERTY DEPARTMENT  
1900 K STREET, N.W.  
SUITE 1200  
WASHINGTON, DC 20006-1109



Date Mailed: 02/14/2006

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

**Applicant(s)**

Fuquan Liang, Tianjin, CHINA;

**Power of Attorney:** The patent practitioners associated with Customer Number 21967.

**Domestic Priority data as claimed by applicant**

This application is a 371 of PCT/CN03/00806 09/22/2003

**Foreign Applications**

CHINA 02130748.2 09/20/2002

**Projected Publication Date:** 05/25/2006

**Non-Publication Request:** No

**Early Publication Request:** No

**Title**

Multi-mode propulsion glide submarine  
GLIDE SUBMARINE DRIVEN BY MULTIMEDIA



PATENT  
ATTY. DOCKET NO. 66638.000002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Number : 10/527,997 Confirmation No.: 6314  
Applicant : Fuquan LIANG  
Filed : March 21, 2005  
Title : GLIDE SUBMARINE DRIVEN BY MULTIMEDIA  
TC/Art Unit : TBA  
Examiner: TBA  
  
Docket No. : 66638.000002  
Customer No. : 21967

**COPY**

PRELIMINARY AMENDMENT UNDER 37 C.F.R. § 1.115

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Prior to examination on the merits, please amend the above-identified patent application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 3 of this paper.

Remarks begin on page 7 of this paper.

**COPY**

**AMENDMENTS TO THE SPECIFICATION:**

*Please add the new paragraph on page 1, line 2, after the title, "GLIDE SUBMARINE DRIVEN BY MULTIMEDIA".*

**CROSS-REFERENCE TO RELATED APPLICATIONS**

This patent application is a U.S. national phase application of PCT/CN2003/00806, filed September 22, 2003, which claims priority to Chinese National Patent Application No. 02130748.2, filed September 20, 2002, both of which are incorporated herein by reference in their entireties.

AMENDMENTS TO THE CLAIMS:

**COPY**

Please amend the claims as follows.

1. (Original) A glide submarine driven by multifunction, which has both underwater and overwater working performances, is mainly powered by means of wind energy resource (reusable and rich in the sea), and is driven by three media, i.e. glide, sail and propeller, comprising a high pressure resistant vessel body, a multi-function sail wing, an elevator, a vertical plane, an internal combustion engine, an electricity generator, a wind power generator, a high energy storage battery, a fuel battery, a foot-operated propeller power system, a submarine elevating controlling system, an inside water tank, two outer elevating water-air bags of changeable stream-linear mode, a sail wing controlling system, and a life maintaining system, a communication system and GPS (global positioning system), and an acoustic susceptance system (sonar system) etc., characterized in that: a multi function sail wing (7) is provided above and outside the vessel, at the center of the sail wing (7), there being provided a rounded hole and means for fixing the wind power generator (28), and a storage battery system (27), and a parallel connecting electric pumps operated submarine elevating system (40) being provided inside the submarine, when the submarine is in an over-water traveling or anchoring condition, the multifunction sail wing (7) is in a sail working condition or a wind collecting condition, at this time, the wing power electrical generator (28) is in an operation condition for charging the high energy storage battery system (27), when submarine being changed from the overwater traveling condition to an underwater working condition, the multifunction sail wing (7) being lowered and changed to a vessel wing working condition, the submerging control valve (37) being opened, because in normal condition the pressure of the water in the outer water bags (3) is always higher than the pressure of inside water tank, at this time, the water in the outer water bags flows into the inside water tank (23) to cause the outer water bags (3) to be contracted, the draining volume of the submarine to be reduced gradually, and the draught of submarine increases gradually, when the draining volume of the submarine reduces to cause the specific gravity of the vessel body is larger than that of water, the submarine

**COPY**

sink down, at this time the connection valve is closed, the operating rod of elevator is activated, and the angle of elevator (2) and the multifunction sail wing (7) is adjusted, the submarine may move forwardly and downwardly with a certain angle, the parallel connecting electric pumps operated submarine elevating system (40) works, and the water within the tank (23) is drained into the outer water bags (3) through the one way draining valve for the water tank (35) and the one way valve (30), at this time, the water bags (3) expand, and the specific gravity of the submarine reduces, when the specific gravity is smaller than the specific gravity of water, the submarine buoys up, at this time, the angle of elevator (2) is adjusted through operating rod of the elevator, so that the submarine may move upwardly and forwardly with a certain angle, until the submarine buoys out of water surface, if the submarine is not requested to buoy out of water surface, after the submarine reaches a certain height, the water within the outer water bags (3) may be drained into the inside water tank again to repeat previous submerging process, with such draining reciprocally, the submarine will advance under the water like a letter "Z" shape.

2. (Original) The glide submarine driven by multifunction according to claim 1, wherein when the submarine travels on water surface, the elevating control wheel (21) and the wing angle control wheel (20) are operated to raise the multifunction sail wing (7) through the said wing control rope (16) and the wing angle control rope (13), and then the wind power generator (28) is installed and the windward angle is adjusted, so that the submarine is driven with the aid of wind power for advancing and the storage battery system (27) of the submarine is charged at the same time.

3. (Original) The glide submarine driven by multifunction according to one of claims 1-2, wherein the wind power electrical generator is of multi use type, that is, it can either be provided with fan blade to be used as a wind power electrical generator, or driven by internal combustion engine to generate, and if necessary it can be used as electrical motor.

**COPY**

4. (Original) The glide submarine driven by multifunction according to claim 1, wherein a manual driving system (22) and an electrical driving system are further provided inside submarine, the manual driving system (22) being equipped with manual driving device which can be operated by a plurality of persons independently and simultaneously, and comprising a foot operated wheel disc, a transmission chain, a fly wheel, a positive and negative rotation converting and coupling devices etc., after treading the foot operated wheel disc, through the transmission chain, the flying wheel, the positive and the negative rotation converting and coupling devices, the propeller and, in turn, the rotating propeller (8) are driven, and the thrust generated by rotation of the propeller (8) is applied to the vessel body through the thrust bearing (25) for advancing the submarine forwardly.

5. (Original) The glide submarine driven by multifunction according to claim 1, wherein when the submarine advances by gliding forwardly under water, or with the aid of sail advancing on water surface, the electrical motor or the internal combustion engine driving device is operated respectively to increase traveling speed of submarine.

6. (Currently Amended) The submarine driven by multifunction according to any one of claim 1[, 3] and 5, wherein the submarine is provided with the wind power generating electricity system, the fuel battery system or the internal combustion engine power system respectively or simultaneously, in traveling condition on water surface or in passed air tube traveling condition, the submarine equipped with the internal combustion engine power system may use the internal combustion engine power system to drive submarine for both advancing and charging storage battery system.

7. (Original) The glide submarine driven by multifunction according to claim 1, wherein a high pressure oxygen bottle (29), an air-filled valve (30) and an over pressure protecting air-filled valve (41) of submarine are provided inside the vessel, the air-filled valve (30) and the over pressure protecting air-filled valve (41) connect with corresponding mechanical or electrical testing and protecting devices, of which the function is: when submarine reaches to submerging safe boundary, while the operator

**COPY**

does not adopt corresponding provision, the over pressure protecting air-filled valve (41) of submarine is opened by said protecting device, partial water within the high pressure resistant water tank (23) inside vessel is drained out of the vessel, then the submarine is going to buoy up, if this operation step is inefficiency, then air is filled into elevating water bag (3) directly through air filled valve, and the submarine is forced to buoy up to protect crew inside vessel for safe.

8. (New) The submarine driven by multifunction according to any one of claim 3, wherein the submarine is provided with the wind power generating electricity system, the fuel battery system or the internal combustion engine power system respectively or simultaneously, in traveling condition on water surface or in passed air tube traveling condition, the submarine equipped with the internal combustion engine power system may use the internal combustion engine power system to drive submarine for both advancing and charging storage battery system.

**COPY**

REMARKS

The specification is amended to reflect the priority information of this application.

The claims are amended to conform to U.S. practice and to correct minor informalities.

The claim amendments are supported by the specification, including original claims, considered as a whole.

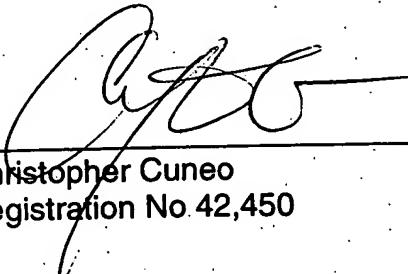
An indication of allowance of all claims is respectfully requested.

Authorization is hereby granted to charge or credit the undersigned's Deposit Account No. 50-0206 for any fees or overpayments related to the entry of this Amendment.

Respectfully submitted,

HUNTON & WILLIAMS LLP

By:

  
Christopher Cuneo  
Registration No. 42,450

Dated: October 31, 2005

Hunton & Williams LLP  
Intellectual Property Department  
1900 K Street, N.W.  
Suite 1200  
Washington, DC 20006-1109  
(202) 955-1500 (telephone)  
(202) 778-2201 (facsimile)